

REMARKSPresent Status of Patent Application

This is a full and timely response to the outstanding non-final Office Action mailed on June 28, 2006. The Office Action has rejected claims 1-9 under 35 U.S.C. 112, first paragraph. Claims 1-9 are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The disclosure is being objected to because of informalities such as grammatical and idiomatic errors. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buehl (US-3,622,296, hereinafter "Buehl"). Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (WO 03/066539 A1, hereinafter "Takagi"). Claims 1-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending application no. 10/503,546.

The disclosure has been corrected in a form of a substitute specification. Claims 1, 3-4, 6-9 have been amended and claim 5 has been cancelled to more accurately describe the present invention and to correct editorial errors. Upon entry of the amendments, claims 1-4, 6-9 remain pending. It is believed that the amendments are well supported by the specification and no new matter is added by way of these amendments made to the claims or otherwise to the application.

After carefully considering the remarks set forth in this Office Action and the cited references, Applicants respectfully submitted that the presently pending claims are already in

condition for allowance. Reconsideration and withdrawal of the Examiner's rejection are requested.

Discussion Regarding Objections to the Specification

The disclosure is being objected to because of informalities such as grammatical and idiomatic errors. The appropriate correction is provided herein in the form of a substitute specification, whereby accompanied by a statement that it contains no new matter.

Discussion Regarding Rejections under 35 U.S.C. 112, 1st paragraph

The Office Action rejects claims 1-9 under 35 U.S.C. 112, 1st paragraph because the specification, while being enabling for specific mass percent ranges of glass compositions does not reasonably provide enablement for glass composition that do not have specified mass percentages for all the components.

As stated in the MPEP 2164.08, the Federal Circuit has repeatedly held that "the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Nevertheless, not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the

scope of enablement must only bear a "reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

As concerns the breadth of a claim relevant to enablement, the only relevant concern should be whether the scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims. >AK Steel Corp. v. Sollac, 344 F.3d 1234, 1244, 68 USPQ2d 1280, 1287 (Fed. Cir. 2003);< *In re Moore*, 439 F.2d 1232, 1236, 169 USPQ 236, 239 (CCPA 1971). See also *Plant Genetic Sys., N.V. v. DeKalb Genetics Corp.*, 315 F.3d 1335, 1339, 65 USPQ2d 1452, 1455 (Fed. Cir. 2003) (alleged "pioneer status" of invention irrelevant to enablement determination).

The determination of the propriety of a rejection based upon the scope of a claim relative to the scope of the enablement involves two stages of inquiry. The first is to determine how broad the claim is with respect to the disclosure. The entire claim must be considered. The second inquiry is to determine if one skilled in the art is enabled to make and use the entire scope of the claimed invention **without undue experimentation**.

In *In re Goffe*, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976), the court stated: [T]o provide effective incentives, claims must adequately protect inventors. To demand that the first to disclose shall limit his claims to what he has found will work or to materials which meet the guidelines specified for "preferred" materials in a process such as the one herein involved would not serve the constitutional purpose of promoting progress in the useful arts.

Further, the federal court stated "...[H]owever, when claims are directed to any purified and isolated DNA sequence encoding a specifically named protein where the protein has a specifically identified sequence, **a rejection of the claims as broader than the enabling disclosure is generally not appropriate because one skilled in the art could readily determine any one of the claimed embodiments.**" See 927 F.2d at 1213-14, 18 USPQ2d at 1027.

Based on the above recited section of patent law from the MPEP, Applicant respectfully traverses against the rejection under 35 U.S.C. 112, First Paragraph as at least the following reasons. First of all, scope of enablement must only bear a "reasonable correlation" to the scope of the claims; therefore, it is not necessary to have the scope of enablement to bear a "complete 100%" coverage of the scope of the claims. Second, scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims; "commensurate with" does not mean "equal to" but instead means "proportional to". Third, determination of the propriety of a rejection based upon the scope of a claim relative to the scope of the enablement involves determining if one skilled in the art is enabled to make and use the entire scope of the claimed invention without undue experimentation; therefore, as long as no undue experimentation is required, enablement is still present if certain compositions are not explicitly described in the embodiments within the claimed scope. Fourth, to demand one shall limit his claims to what he has found will work or to materials which meet the guidelines specified for "preferred" materials in a process would not serve the constitutional purpose of promoting progress in the useful arts. Finally, a rejection of the claims as broader than the

enabling disclosure is generally not appropriate because one skilled in the art could readily determine (via reasonable experimentation) any one of the claimed embodiments.

In view of the foregoing reasons, Applicant respectfully requests a re-consideration and a withdrawal of the rejections under 35 U.S.C. 112, 1st paragraph.

Discussion Regarding Rejections under 35 U.S.C. 112, 2nd paragraph

The Office Action rejects claims 1-9 as being indefinite because the limitation in the claim does not allow for one of ordinary skill in the art to derive the ranges of the other components or to understand the scope of the claim as a whole.

Applicant respectfully traverses the 35 U.S.C. 112, 2nd paragraph rejection for at least the following reasons.

According to the MPEP 2173.02, “[d]efiniteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) The content of the particular application disclosure;
- (B) The teachings of the prior art; and
- (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

An example of "the content of the particular application disclosure" that provides for definiteness of claim language is shown in paragraphs [0025]-[0026] recited below:

[0025]*The "multicomponent oxide glass composition" of the present invention is referred to the oxide glass containing two or more types of oxides as the main components and containing mass ratio of 50% or more in total of the two or more types of oxides, as main components. The "multicomponent oxide glass composition" of the present invention does not apply to a glass composition having a single composition with several components mixed as impurities. For example, the "multicomponent oxide glass composition" of the present invention does not apply to a glass composition having close to 99% in mass ratio in percentage % of a single component such as silica, and 0.09 or less in mass%, at two decimal places, of the several components, respectively.*

[0026]*Further, the glass composition of the present invention preferably contains, in addition to the above components, at least one component selected from the group consisting of fluorine (F), chlorine (Cl), and sulfur trioxide (SO₃), in a mass ratio of 1 ppm or more, or a hydroxide group (OH group) in a mass ratio of 10 ppm or more.*

First, the technology and the various material compositions for a conventional "oxide glass containing two or more types of oxides as the main components" used as part of the

definition for the "multicomponent oxide glass composition" is well known in the art. Therefore, "teachings of the prior art" is more than adequate in providing support for some of the definiteness requirement under 35 USC 112, second paragraph. As a result, apart from the novel compositions specially tailored for the practice of the present invention, most of the other material compositions can be derived from the prior art.

Second, the (amount of minimum valence cations)/(amount of polyvalent elements) as taught in Tables 1, 2, 3 are fully described and enabled by having the corresponding data for the (amount of minimum valence cations)/(amount of polyvalent elements) in relation to the amount of polyvalent element oxide added (mass%) for a plurality of embodiments and types of polyvalent element oxide.

In regards to the term "polyvalent" in the original claim 5, Zn is 0 valence in the metal state and is 2 in oxidation state. Therefore, Zn is "polyvalent". Similarly Cd can take 0, +2 and +4, and Ag can take 0 +1 and +2. Accordingly, these elements are "polyvalent".

In regards to a method for measuring the helium content in the glass, [0063] of the specification has provide a reasonable method for measuring content in the glass. According to the teachings in [0063] teaches that helium gas was analyzed using a quadrupole mass spectrometer (QMA125, manufactured by Balzers AG) installing a secondary electron multiplier (SEM) for improved measurement sensitivity. Gas analysis using the quadrupole mass spectrometer involved the following steps: placing a required amount of glass sample to be measured in a platinum dish, keeping the platinum dish in a sample chamber to vacuum of 10^{-5}

Pa (that is, 10^{-8} Torr), and introducing the gas heated and discharged into the quadrupole mass spectrometer having a measuring sensitivity of 0.001 $\mu\text{l/g}$.

For at least the foregoing reasons, Applicant respectfully requests a re-consideration and a withdrawal of the rejections under 35 U.S.C. 112, 2nd paragraph.

Discussions Regarding Rejections under 35 U.S.C. 103(a)

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhel (US-3,622,296, hereinafter "Buhel").

The Office stressed that Buhel teaches a glass composition containing helium in col. 1, lines 55 to col. 2, lines 1-26, Buhel, however, fails to teach or suggests "10 ppm or more of at least one type of a polyvalent element" and "mass ratio of the minimum valence cations of the polyvalent element with respect to a total polyvalent element content" as taught in claim 1.

Moreover, claim 1 teaches that the glass composition of the instant application is for a sheet glass used in flat panel displays or for a crystallized glass. This limitation is supported by the description on [0043] of the specification. Buhel, however, simply discloses borosilicate glasses one line 33 of column 2. Buhel has neither explicitly teaches nor implicitly suggests a glass composition for a sheet glass used in flat panel displays or for a crystallized glass.

Additionally, claim 1 further recites that at least one type of a polyvalent element is selected from the group consisting of V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Y, Zr, Mo, Rh, Ag, Cd, Sn, Sb, Te, Ti, Pt, Au, and Bi. As taught in [0013]-[0014], the selected polyvalent element to contribute to glass coloring and to an improvement in chemical durability, in addition to

the fining. Further, the selected polyvalent element can impart various functions at higher levels to the glass composition, in addition to homogeneity. Moreover, the present invention teaches selecting Sn, Sb, As, or Fe as a polyvalent element and adjusting a ratio of a minimum valence cation content to a total amount of each of those elements within a specific range produces more preferable results regarding fining. All the above features are absent from Buehl's teachings.

As a result of the above patentable features and limitations and the foregoing reasons, Applicant submits that Buehl does not teach of every feature and limitation of independent claim 1; its dependent claims 9-14, 29-30 are allowable as a matter of law, for at least the reason that these dependent claims contain all features/elements/steps of their respective independent claim 1. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Accordingly, reconsideration and withdrawal of this rejection are respectively requested. Favorable consideration and allowance of the present application and all pending claims are hereby courteously requested.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (WO 03/066539 A1, hereinafter "Takagi").

Applicant respectfully submits to the Office that the publication date of Takagi's patent application is August 14, 2003, which is later than the foreign priority date February 18, 2003 of the present application. Accordingly, Takagi is not qualified as a proper prior art for the present invention. A copy of an English translation of the corresponding foreign application is enclosed herewith. Accordingly, a withdrawal of the rejection is respectfully requested.

Rejections under nonstatutory obviousness-type double patenting

Claims 1-9 are provisionally rejected based on the groud of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/503,546.

In response thereto, a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) is enclosed. Reconsideration and withdrawal of this rejection are respectively requested.

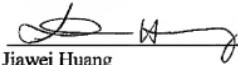
CONCLUSION

For at least the foregoing reasons, it is believed that the presently pending claims 8-15, 29-30 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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